Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Denbury Onshore, LLC
Well Name/Number: Unit 31C-10SHR 760
Location: NW NE Section 10 T7N R60E
County: Fallon **, MT; Field (or Wildcat)** East Lookout Butte

Air Quality

(possible concerns)
Long drilling time: No, 20-30 days drilling time.
Unusually deep drilling (high horsepower rig): No, triple drilling rig for 15,229'MD/9074' TVD, horizontal replacement well. Red River Formation at total depth.
Possible H2S gas production: Yes, possible H2S gas from these Mississippian, Devonian, Silurian-Ordovician formations.
In/near Class I air quality area: No Class I air quality area in area of review.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
- X Air quality permit (AQB review)
- __ Gas plants/pipelines available for sour gas
- __ Special equipment/procedures requirements
- __ Other:_____

Comments: No special concerns – using a triple derrick drilling rig to drill a 15,229'MD/9074' TVD, horizontal replacement well. Red River Formation at total depth. If there are existing pipelines for associated gas in the area, gas can be gathered or if no gathering system nearby, associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)
Salt/oil based mud: Yes, main hole will utilize oil based invert mud to drilled the intermediate casing hole. The horizontal lateral will be drilled with saltwater brine. Use freshwater and freshwater mud system for drilling surface hole (Rule 36.22.1001)
High water table: No, high water table anticipated at this location.
Surface drainage leads to live water: No, closest drainages are an unnamed ephemeral tributary drainages to Sandstone Creek, about 1/4 of a mile west and Sandstone Creek, about 1/8 of a mile to the south from this location.
Water well contamination: None, closest water well are about ½ of a mile to the north northwest, about ½ of a mile to the west southwest, about ½ of a mile to the northwest, about ½ of a mile to the southeast, about 5/8 of a mile to the north northwest, about 5/8 of a mile to the west southwest, about 5/8 of a mile to the south, about 5/8 of a mile to the southeast, about ¾ of a mile to the north, about

¾ of a mile to the southeast and about ¾ of a mile to the south from this location. Depth of these water wells range from 40' to 205'. Surface casing will be set below all known water wells in the area. Surface hole will be drilled with freshwater and freshwater drilling fluids, rule 36.22.1001. Surface casing will be set to 1000' and cemented back to surface.
Porous/permeable soils: No, sandy clay soils.
Class I stream drainage : No Class I stream drainages in the area of review.

Mitigation:

X Lined reserve pit. **Synthetic liner of 12 mil thickness.**
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
X **Off-site disposal liquids (in approved facility)**
__ Other: _____

Comments: 1000' of surface casing cemented to surface is adequate to protect freshwater zones. Also, fresh water drilling mud systems to be used to drill the surface hole, rule 36.22.1001. Oil base invert drilling fluids will be used to drill the hole from under surface casing to intermediate casing TD. Saltwater brine will be used to drill the horizontal lateral. Oil based drilling fluids will be recycled . Saltwater drilling fluids and completion fluids will be hauled to a commercial Class II disposal. Solids will be disposed of in the lined reserve pit after being allowed to dry, if necessary solids will be solidified and the pit liner folded over the top of the solids, minimum of 4' of spoil dirt to fill pit over the top of the cuttings.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None anticipated.
High erosion potential: No high erosion at this well site due to small cut and fill requirements, small cut, up to 9.6' and small fill, up to 8.4', required.
Loss of soil productivity : None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: Large, 300'X400' location size required.
Damage to improvements: Slight, surface use is grazing land.
Conflict with existing land use/values: Slight

Mitigation

__ Avoid improvements (topographic tolerance)
__ Exception location requested
X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: All of the access will be over existing State Highway 12, existing county roads and existing lease road. About 199' of new road will be constructed into this location off the existing lease road. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 5/8 of a mile to the northwest, about 5/8 of a mile to the northeast, about ¾ of a mile to the south and the town of Baker, Montana, about 4.5 miles to the west from this location.

Possibility of H2S: Yes H2S possible from the Mississippian, Devonian, Silurian-Ordovician formations..

Size of rig/length of drilling time: Triple drilling rig 20 to 30 days drilling time.

Mitigation:

_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
_X_ Other: Standard H2S training for the rig personnel and H2S safety equipment on location.

Comments: No special concerns. Proper BOP stack (5000 psig annular with double blind rams and pipe rams) and surface casing should be able to control any problems that could occur.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None, identified

Proximity to recreation sites: Lake Baker, about 4.5 miles to the west southwest from this location.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Whooping Crane. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. MTFWP Natural Heritage Tracker website lists three (3) species of concern. They are the Baird's Sparrow, Greater Sage Grouse and the Sprague's Pipit.

Mitigation:

__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other: _____

Comments: The surface ownership is private land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to

consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

__ avoidance (topographic tolerance, location exception)

__ other agency review (SHPO, DSL, federal agencies)

__ Other:_____

Comments: On private surface land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desire to preserve these sites or not, if they are found during construction of this wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

__ Substantial effect on tax base

__ Create demand for new governmental services

__ Population increase or relocation

Comments: No concerns, a replacement oil well within the East Lookout Butte Oil Field.

Remarks or Special Concerns for this site

Well is a 15,229'MD/9074' TVD, horizontal replacement well. Red River Formation replacement well in the East Lookout Butte Oil Field.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector
Date: June 13, 2013

Other Persons Contacted:

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Montana Bureau of Mines and Geology, GWIC website

_____
(Name and Agency)
Fallon County water wells__
(subject discussed)

June 13, 2013 _____
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Fallon County
(subject discussed)

June 13, 2013 _____
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T7N R60E
(subject discussed)

June 13, 2013 _____
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 10 T7N R60E
(subject discussed)

June 13, 2013 _____
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection:_____